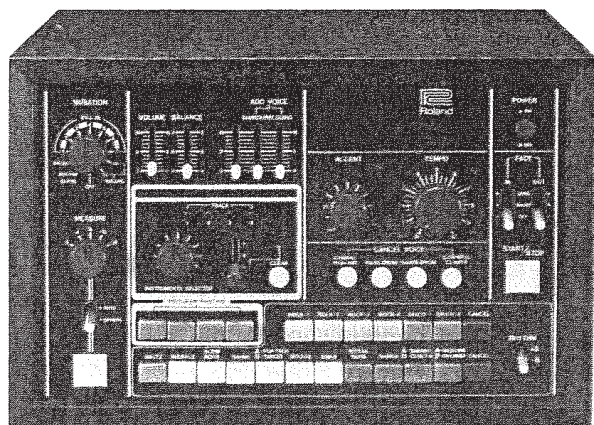


COMPURHYTHM

CR-78

OWNER'S MANUAL



- An infinite number of rhythm patterns are yours because of the adoption of a micro-computer in this instrument.
- With 11 kinds of percussion instruments as the sound source, there are 34 different preset rhythm patterns. Along with this, 2 kinds of ADD VOICE and METALLIC BEAT, plus CANCEL VOICE which cancels out different instrument sounds of each pre-set rhythms offers many variations on the rhythm patterns.
- FILL IN, ROLLING and BREAK produce variations in rhythmic progression.
- LONG and SHORT FADE IN and FADE OUT are possible.
- With the importance of rhythm flow in mind, the rhythm pattern will change from the next measure.
- ACCENT makes the rhythms musical.
- With the TRIGGER OUT and EXTERNAL CLOCK IN functions, tempo synchronization with external instruments such as a sequencer is made possible.

«CAUTION»

Turn on the power switch for a twenty four hour period at least once every six months in order to charge the memory backup battery when this machine is not in regular use.

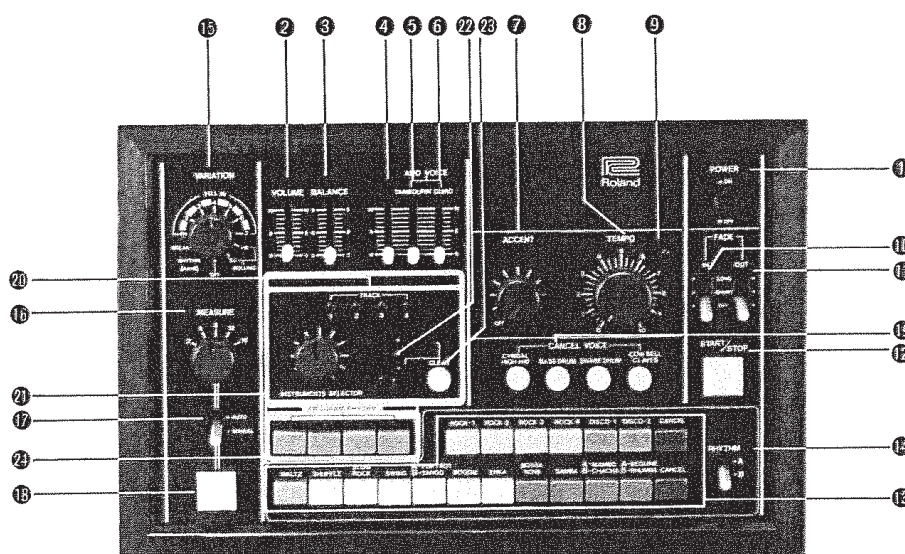
This unit uses a battery backup to protect the user-loaded memory data when the power switch is off. If the battery loses its charge, the memory will be lost.

If it is not charged for a long period of time, the battery may swell and leak gas which may damage this unit.

Plugging or unplugging the cord while the power switch is on might cause the built-in computer to malfunction. Therefore always plug in the cord before turning on the power.

(If malfunction of the computer occurs, turn off the power switch and 5 seconds later turn it on again.)

NAMES AND FUNCTIONS OF THE COMPONENTS FRONT PANEL



1 POWER

2 VOLUME

3 BALANCE (Balance Control)

This slider controls the balance of the percussion sounds. Sliding it upward will emphasize the high percussion sounds (cymbal, high hat, maracas) and sliding it downward will emphasize the low percussion sounds (bass drum).

4 CYMBAL HIGH HAT METALLIC BEAT

This slider controls the volume of METALLIC BEAT to make the sound of the cymbal (CY.) and the high hat (HH.) the way you want it to sound. METALLIC BEAT will occur at the same time as with the pattern of the cymbal and high hat in the pre-set rhythms (for SWING, the METALLIC BEAT will be simultaneously played with the cymbal, the high hat, and the METALLIC BEAT). *When the Cymbal/high hat Cancel Button 13 is on the sounds of the cymbal and high hat are cancelled, and the METALLIC BEAT will be played in an 8-beat rhythm which has on correspondence with the pre-set rhythms.

5 ADD VOICE — TAMBOURINE

This slider controls the volume of the tambourine.

6 ADD VOICE — GUIRO

This slider controls the volume of the guiro.

*ADD VOICE maintains a fixed rhythm in no relation to the pre-set rhythms.

7 ACCENT — Accent Volume

This knob regulates the amount of accentuation. Turning it to the right strengthens the accent.

8 TEMPO — Tempo Control

This knob controls the tempo of the rhythm.

9 TEMPO PILOT LAMP

The lamp lights up at the first beat of a measure. It indicates the speed of the rhythm.

10 FADE IN — FADE IN Selector

FADE IN is the effect where the Sound level gradually increases until it reaches the level of loudness determined by the VOLUME 2 control. Set at OFF when not using the FADE IN effect.

11 FADE OUT — FADE OUT Selector

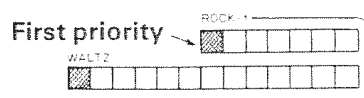
FADE OUT is gradual dying away of the sound. Set at OFF when not using the FADE OUT effect.

12 START/STOP

13 RHYTHM SELECTION BUTTON

Press the button to choose the rhythm you want. You can have a combination of two rhythm patterns by simultaneously pushing two buttons.

If you push three buttons simultaneously, two rhythms will be selected.



14 RHYTHM (A,B)—Rhythm Pattern Selection Switch

Each RHYTHM SELECTION BUTTON 13 has two kinds of pre-set rhythm patterns. You choose one of the two patterns with this switch. «VARIATION»

The addition of the VARIATION effect produces changes in the rhythmic progression.

15 VARIATION SELECTOR

This knob chooses the pattern of variation in rhythm.

FILL IN: 1-7

Seven variation patterns are pre-set. In the measure set with MEASURE SELECTOR, a variation is adopted instead of a normal rhythm succession.

ROLLING: HB. SD.

For ROLING, the following variations are added;

HB: High Bongo SD: Snare Drum RHYTHM (A-B)

When the RHYTHM PATTERN SELECTION SWITCH 14 is set at A, this knob changes the rhythm pattern to B. If it is set at B, RHYTHM changes it to A.

BREAK

The pattern of a measure of rhythm and then a succeeding measure of rest are produced with BREAK.

16 MEASURE — Measure Selector

This knob selects the variation cycle when you want to make variations automatically. If you set it at "2", a variation in rhythm occurs once every two measures in the second measure.

Set it at "16" and you will have a normal rhythm pattern for 15 measures and then a variation in the 16th measure.

17 MANUAL/AUTO SELECTION SWITCH

When you want automatic variations in rhythm, switch on to AUTO. For manual operation, select MANUAL.

18 MANUAL BUTTON

When you want to make variations manually, use this button. During performance, no matter when you press the button, with the functioning computer, a variation occurs in the following measure.

19 CANCEL VOICE — Cancel Button

These buttons cancel the indicated instrument sounds when using the per-set rhythms.

«PROGRAMMER»

With the CR-78, you can create your own rhythmic patterns and have them memorized by the micro-computer circuits.

20 TRACKS 1, 2, 3, 4

The diodes with light up in synchronization with the programmed rhythm.

21 INSTRUMENT SELECTOR

This knob selects the instrument voice you want.

*At the ACCENT position, rhythmic accents can be programmed.

22 MEMORY — PLAY — ALL

Program Switch

MEMORY: This position it is used for programming a pattern or for clearing one track.

PLAY: This position is used for reproducing the memorized rhythmic patterns. Aside from when not programming rhythmic patterns, always the switch at play.

ALL: When you want to erase all four tracks of the programmed rhythms, set it to this position the Clear Button 23.

23 CLEAR — Clear Button

This is used for erasing the memorized rhythms.

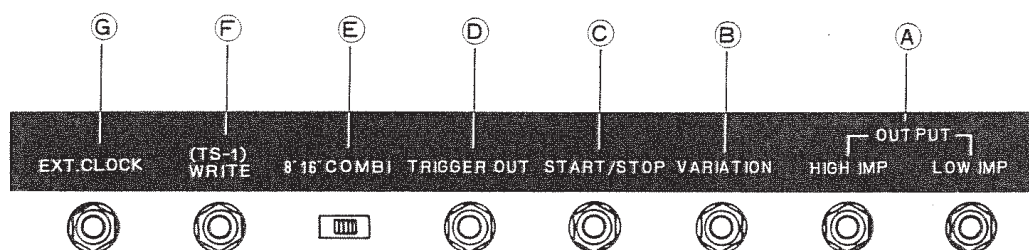
24 PROGRAM RHYTHM Buttons

The memory number selection buttons are used for rhythm programming or for using the rhythms you have already programmed.

The order of priority is shown in the diagram below.



REAR PANEL



A OUTPUT (Output Jack)

Use the jack with the input impedance which matches the amplifier or instrument being used.

B VARIATION

This jack is for using the pedal switch (DP-1, DP-2) to start a variation rhythm.

C START/STOP

This jack is for using the pedal switch (DP-1, DP-2) to start or stop a rhythm.

D TRIG OUT

This jack is for the output of a trigger pulse with the same cycle as the rhythm.

EXAMPLE

By connecting CR-78 to a sequencer or JUPITER-4, the production of a same cycle will make it possible to control the synthesizer.

E 8", 16" COMBI

This switch selects the way the pulse is generated from the TRIGGER OUT D jack.

°8 beat: produces a pulse eight times in a measure.

°16 beat: produces a pulse sixteen times in a measure.

°Combination: changes in *pattern according to the rhythm.

*The pulse of the output of the bass drum, and the high bongo combined is produced.

F WRITE

This jack is for connecting the accessory TS-1 (or the optional DP-2) used for programming rhythmic patterns.

G EXT CLOCK

By connecting an external clock pulse to this jack, you can control the tempo of the CR-78 by means of an external instrument.

By supplying a clock of 48 counts per measure to the CR-78 from an external source the CR-78 will be completely synchronized to it.

*At this point TEMPO CONTROL and the TEMPO PILOT LAMP on the front panel have no relations to this function.

«EXTERNAL CLOCK PULSE»

PROGRAM Switch at PLAY

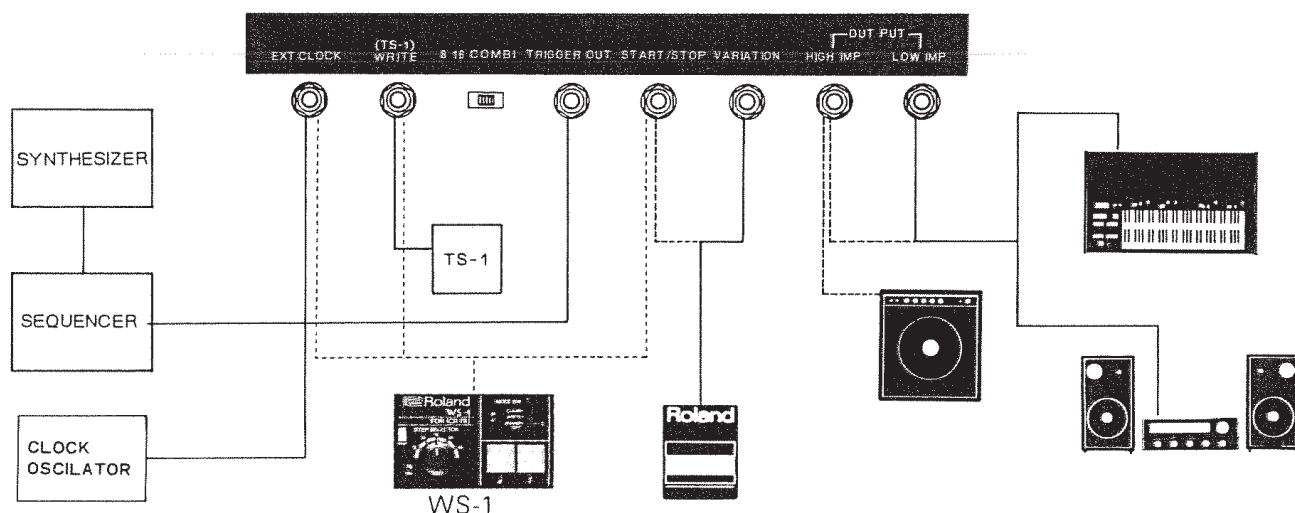
Voltage: +5 ~ +15V

minimum pulse width: 5 ms

frequency: 5 Hz — 100 Hz

*Synchronization takes place at 48 counts per measure.

CONNECTION TERMINAL



INSTRUCTIONS FOR OPERATION

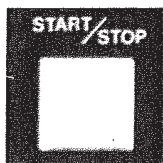
1. After following instructions on HOOKUP, turn on the power switch of CR-68 as well as of the amplifier or of the instrument.



2. Choose the rhythm you want with the RHYTHM SELECTION BUTTON and the RHYTHM PATTERN SELECTION SWITCH.

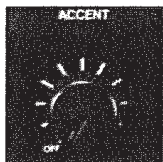


3. Push the START/STOP BUTTON. This will start the rhythm.



4. While listening to the rhythm, adjust the volume, the balance and the tempo.

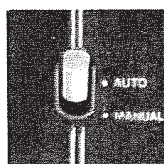
5. Adjust the amount of accentuation with the ACCENT VOLUME. (in making variations)



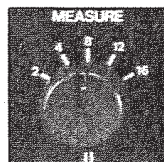
«VARIATION»

FOR AUTOMATIC CONTROL

1. Switch on to AUTO of the MANUAL/AUTO SELECTION SWITCH.

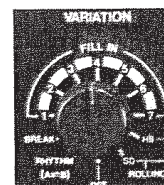


2. Choose the variation cycle with the MEASURE SELECTOR.



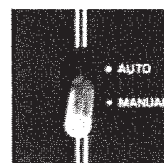
•Setting at "4", once every four measures, setting at "8", once every eight measures you will get a variation in the last measure for each case.

3. Choose the variation pattern with the VARIATION SELECTOR.

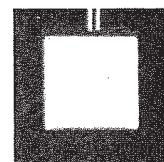


FOR MANUAL CONTROL

1. Switch on to MANUAL of the MANUAL/AUTO SELECTION SWITCH.



2. Push the MANUAL BUTTON and insert a "variation" in the desired measure.



The variation will always occur on the first beat of the following measure.

For tempo control of rhythms with the clock signal

To start

You can either pass through the clock signal first and then press the Start/Stop Button or press the button first and then pass the signal.

To stop

First press the Start/Stop Button and then stop the clock oscillator signal. The rhythm will commence from the first beat if started again.

Note

Terminating Just the clock signal will stop the rhythm and commencing the signal again will start the rhythm from where it last ended.

THE OPERATION OF THE PROGRAMMER SECTION

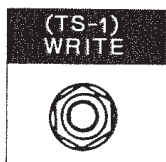
The CR-78 will memorize. You can make your own rhythmic patterns. The memory is programmed with the manual switch (TS-1) or the optional pedal switch DP-1, DP-2. Four voices

can be used for each rhythmic pattern and four rhythmic patterns, each of two measures (96 counts), can be memorized. Also erasing one voice or the whole rhythm pattern is possible.

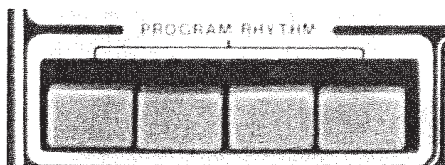
Therefore you can create new patterns over and over again. The built-in battery will preserve the memorized data as long as it is recharged every six months.

PROGRAMMING

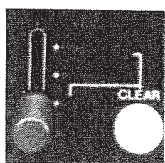
1. Connect the accessory manual switch (TS-1) to the WRITE jack on the rear panel.



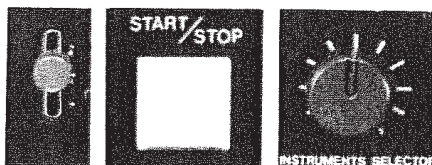
2. Press the PROGRAM RHYTHM (I-IV) buttons where you want the rhythm memorized.



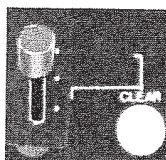
3. Set the Program Switch to ALL and press the CLEAR button. This will erase any previously programmed rhythm.



4. Set the Program Switch to PLAY. While striking TS-1, choose an instrument sound from the INSTRUMENT SELECTOR.



5. Set the PROGRAM switch at MEMORY and the memories are now ready to accept rhythmic patterns "played" with the TS-1. Push START. (The VARIATION switch should be at OFF). The memories will accept rhythm pulses at any time. This means that any number of measures may be allowed to pass by in order to get the rhythm and tempo in mind. Also, if you have accidentally omitted a beat, for example, merely wait for the two measure pattern to repeat and add the beat where desired.



The above procedure will load the rhythm pattern for the selected voice into TRACK 1. The TRACK 1 LED will flash each time the voice is triggered.

6. Repeat the above steps for the next desired rhythm voice. The new voice will automatically be loaded into TRACK 2. Repeat again for two more voices.

•If the ACCENT position of the INSTRUMENT SELECTOR switch is used, an accent will occur at any point where the TS-1 is pressed.

•If a mistake is made while loading one of the voices, press the CLEAR button and do that voice over again.

*Remember that beats may be added to any of the voices at any time without having to clear the memory and start over. Just select the voice with the INSTRUMENT SELECTOR and, with the PROGRAM switch at MEMORY, use the TS-1 switch to add the desired beats.

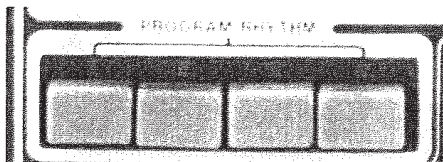
*Striking the TS-1 with something hard as a drumstick will make programming more precise.

*For programming rhythm, listen to the tempo for first 2 measures and from the 3rd measure start striking the TS-1.

Aside from the method of using the TS-1. The other method is by the use of the WRITE SWITCH WS-1, sold separately. This WRITE SWITCH WS-1 is a writing machine made exclusively for the CR-78. The WS-1 divides the rhythm pattern into steps of either 8-12-24 or 48 and since it is programmed by one step at a time, writing rhythm can be done accurately and easily. For details, please refer to the OWNER'S MANUAL.

PLAYING BACK THE MEMORIZED RHYTHM PATTERNS

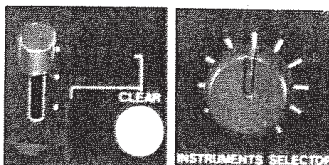
1. Press one of the PROGRAM RHYTHM button (I-IV) which contains the desired the rhythm is memorized.



THE MEMORY CLEAR FUNCTION

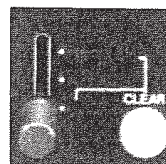
(Erasing one voice)

Set the PROGRAM switch at MEMORY. Use the INSTRUMENT SELECTOR switch to select the voice to be erased and push the CLEAR button.



(Erasing the total rhythm pattern)

Set the program Switch to ALL and press the CLEAR Button.



CAUTION

*The PROGRAM switch should be left in the PLAY position when not loading the memories in order to prevent accidental erasure of the programmed rhythmic patterns.

RHYTHM PATERN

BASS DRUM LOW BONGO SNARE DRUM CLAVES MARACAS CYMBAL
 LOW CONGA HIGH CONGA HIN SHOT COW BELL HI-HAT
 F.B.D. LOW CONGA

WALTZ

SHUFFLE

SLOW ROCK

SWING

FOX TROT

TANGO

BOOGIE

ENKA

BOSSA NOVA

CHACHA

MARSH

CHA-CHA

RE-CUE

RUMBA

RE-CUE

RE-CUE

RE-CUE

RE-CUE

DISCO-1

DISCO-2

★ FILL IN ★

3

4

6

SPECIFICATIONS

• RHYTHM SELECTION BUTTONS

ROCK 1-4, DISCO 1-2, WALTZ, SHUFFLE, SLOW ROCK, SWING, FOX TROT, TANGO, BOOGIE, ENKA (a general in Japanese music), BOSSANOVA, SAMBA, MAMBO, CHACHA, BEGUINE, RHUMBA

• SOUND SOURCE

BASS DRUM, SNARE DRUM, RIM SHOT, HI-HAT, CYMBAL, MARACAS, CLAVES, COW BELL, HIGH BONGO, LOW BONGO, LOW CONGA

• VARIATION SELECTOR

FILL IN 1-7, BREAK, RHYTHM (A-B), ROLLING-HB, SD

• MEASURE SELECTOR (2, 4, 8, 12, 16) :1

• CONTROL KNOB :4

LEVEL, BALANCE, ACCENT, TEMPO

• SWITCH (BUTTON) :7

FADE IN, FADE OUT, START/STOP, RHYTHM PATTERN SELECTOR, AUTO/MANUAL SELECTOR, MANUAL POWER

• CANCEL BUTTONS :4

CYMBAL + HIGH HAT, BASS DRUM, SNARE DRUM, COW BELL + CLAVES

• ADD VOICE

CONTROL SLIDERS :2

TAMBOURINE LEVEL, GUIRO LEVEL

• CY HH METALLIC BEAT

CONTROL SLIDER :1

METALLIC BEAT LEVEL

• INDICATOR :1

TEMPO (also used as Power Source Pilot Lamp)

• PROGRAMMER

INSTRUMENTS SELECTOR KNOB :1

Bass Drum, Snare Drum, Rim Shot, High Hat, Cymbal, Maracas, Claves, High Bongo, Low Bongo, Low Conga, Accent

SWITCHES (BUTTONS) :2

MEMORY W/D, PLAY, ALL

CLEAR

INDICATORS :4

TRACK 1-4

PROGRAM RHYTHM :4

SELECTION BUTTONS

I, II, III, IV

• JACK

OUTPUT :2

Hi: 220k Ω 3.5Vp-p (220k Ω Load)

Low: 10k Ω 5.5Vp-p (10k Ω Load)

(Vol.: max., Acc. Vol.: max.)

FOOT SWITCH :3

START/STOP, VARIATION (DP-1, DP-2)

WRITE (TS-1)

TRIGGER PULSE OUT :1

OFF: OV/ ON: +15V pulse

• TRIGGER PULSE SELECT IN SWITCH :1

8 beat, 16 beat, combination

• EXT. CLOCK :1

OFF: OV/ ON: +5 ~ +15V pulse, min. 5ms width

• POWER CONSUMPTION

13W

• DIMENSIONS

300(W) X 280(D) X 205(H)mm

11.8"(W) X 11.0"(D) X 8.1"(H)

• NET WEIGHT

5.5 kg

12.1 lbs.

• ACCESSORIES

2.5m connection cord, TS-1

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

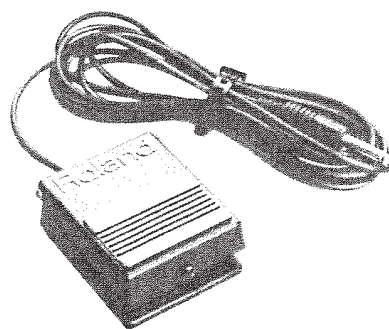
PRECAUTIONS

- Keep away from interferences that induce high levels of noise, such as fluorescent lamps, neon lights and transformers as much as possible.
- Tone quality might vary depending on the amplifier used.
- Rough manipulation of the power switch can be the cause of failure in the computer component.
- Avoid places that are dusty, of high temperature or high humidity.
- Use neutral detergent when cleaning the control panel and a soft, dry cloth for the wooden body.

*Do not use solvents such as paint thinner.

OPTION

PEDAL SWITCH DP-2



WRITE SWITCH WS-1

